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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/888,093	06/21/2001	John S. Judge	Q01-1019-US1	6483

7590 05/18/2006

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EXAMINER

CASTRO, ANGEL A

ART UNIT PAPER NUMBER

2627

DATE MAILED: 05/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/888,093	JUDGE ET AL.	
	Examiner	Art Unit	
	Angel A. Castro	2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6,10,12,16-19,34,51,52,66-94 and 101-123 is/are pending in the application.
- 4a) Of the above claim(s) 66-94 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6,10,12,16-19,34,51,52,101,103-110 and 112-123 is/are rejected.
- 7) ☒ Claim(s) 102 and 111 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/3/06 has been entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 51, 105, 108 and 113 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Regarding claim 108 it is not clear how the optical phase change can have a magneto-optic recording layer.

Claim 51 recites the limitation "the reflective layer" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claims 105 and 113 recites the limitation "the reflective layer" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-5, 12, 34 and 51 are rejected under 35 U.S.C. 102(e) as being anticipated by Ono et al (U.S. Pat. 6,869,655).

Regarding claim 1, Ono et al discloses an optical recording article for use in an information storage system (figure 11 or 24) comprising:

a substrate in the form of a tape (column 3, lines 66-67);

a magneto-optic recording material TeFeCo; and

a reflective material (Al) between the substrate and the magneto-optic recording material.

Regarding claim 2, Ono et al discloses that the magneto-optic recording material consist of a single alloy of two or more metals (see previous claim).

Regarding claim 3, Ono et al discloses that the article comprises a flexible article (a tape).

As the claims are directed to an optical recording article, per se, the method limitations appearing in line 2 of claim 4 has only been accorded weight to the extent that it/they affects the structure of the completed optical recording article. Note that "determination of patentability in 'product-by-process' claims is based on product itself, even though such claims are limited and defined by process [i.e., "sputtering"], and thus product in such claim is unpatentable if it is the same as, or obvious form, product of prior art, even if prior product was made by a different

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process", *In re Thorpe, et al.*, 227 USPQ 964 (CAFC 1985). Furthermore, note that a "product-by-process claim, although reciting subject matter of claim in terms of how it is made [i.e., "sputtering"] is still product claim; it is patentability of product claimed and not recited process steps that must be established, in spite of fact that claim may recite only process limitations", *In re Hirao and Sato*, 190 USPQ 685 (CCPA 1976).

Regarding claim 5, Ono et al discloses that the substrate comprises a polymer (column 4, lines 7-8).

Regarding claims 12 and 34, it is inherent that the tape is wound around a reel without cracking of the article.

Regarding claim 51, Ono et al discloses that the reflective layer comprises aluminum (column 12, line 38).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 101, 105-107, 110, 112-114 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhou et al (U.S. Pat. 5,876,822) in view of Hirata et al (U.S. Pat. 5,725,943).

Regarding claim 101, Zhou et al discloses an optical phase change tape (figure 2) comprising, in this order:

a substrate comprising a polyester film;

a first heat absorbing layer 2 comprising zinc sulfide and silicon oxide (column 3, line 66);

an optical recording layer comprising germanium, antimony, and tellurium (column 4, line 62);

a second heat absorbing layer comprising zinc sulfide and silicon oxide (column 3, line 66).

Regarding claim 103, Zhou et al discloses that the optical recording layer is about 20 nanometers thick (column 6, line 28).

Regarding claim 105, Zhou et al discloses that the reflective layer is about 40 nanometers thick (see example 17, layer d₅).

Regarding claim 106, Zhou et al discloses that the first heat absorbing layer is about 20 nanometers thick (see example 17, layer d₂).

Regarding claim 107, Zhou et al discloses that the second heat absorbing layer is about 80 nanometers thick (see example 9).

Regarding claim 112, Zhou et al discloses that the optical recording layer is a 50 nanometers thick of GeSbTe (see figure 9).

Regarding claims 113-114, Zhou et al discloses that the reflective layer comprises titanium and aluminum (column 4, lines 1-2).

Zhou et al does not specifically disclose that the substrate comprise a polyaramid material. Hirata et al discloses a tape having a substrate comprising a polyaramid material (column 3, lines 18-21). It would have been obvious to one of ordinary skill in the art at the time

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the invention was made to provide the optical phase change tape of Zhou et al with a substrate comprising a polyaramid material as taught by Hirata et al.

The rationale is as follows: one of ordinary skill in the art would have been motivated to provide the optical phase change tape of Zhou et al with a substrate comprising a polyaramid material as taught by Hirata et al as doing this would decrease the wrinkles of the tape due to the thermal process involved in manufacturing the tape.

Regarding claims 104 and 109, Zhou et al in view of Hirata does not specifically disclose the claimed range of thickness of the substrate. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the optical phase change tape of Zhou in view of Hirata et al with the substrate having the claimed thickness.

Furthermore, one of ordinary skill in the art would have been motivated to have had the optical phase change tape with the claimed dimension ranges of the thickness and since such ranges, absent any criticality (i.e., unobvious and/or unexpected results), are generally achievable through routine optimization/experimentation, and since discovering the optimum or workable ranges, where the general conditions of a claim are disclosed in the prior art, involves only routine skill in the art.

8. Claims 6, 16-19, 115, 117-118 and 122 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ono et al in view of Hirata et al.

Regarding claim 115, Ono et al discloses a magneto-optic tape comprising, in this order:

a first heat absorbing layer comprising silicon nitride (column 12, line 38);

a magneto-optic recording layer comprising a single alloy of two or more metals (column 12, line 38); and

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a second heat absorbing layer comprising silicon nitride (column 12, lines 38-39).

Regarding claim 118, Ono et al discloses that the first heat absorbing layer is about 20 nanometers thick (see claim 11).

Regarding claim 122, this claim is rejected for the reasons detailed above.

Ono et al does not specifically disclose that the substrate comprise a polyaramid material. Hirata et al discloses a tape comprising a polyaramid material.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the magneto-optic tape of Ono et al with the substrate comprising a polyaramid material as taught by Hirata et al.

The rationale is as follows: one of ordinary skill in the art would have been motivated to provide the magneto-optic tape of Ono et al with the substrate comprising a polyaramid material as taught by Hirata et al as doing this would decrease the wrinkles of the tape due to the thermal process involved in manufacturing the tape.

Regarding claims 6, 16-19 and 117, Ono discloses the optical recording article described above. Ono et al does not specifically disclose the material of the substrate or the range of thickness. Hirata et al discloses the claimed material of the substrate. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the optical phase change tape of Ono et al in view of Hirata et al with the substrate having the claimed thickness.

Furthermore, one of ordinary skill in the art would have been motivated to have had the optical phase change tape with the claimed dimension ranges of the thickness and since such ranges, absent any criticality (i.e., unobvious and/or unexpected results), are generally achievable through routine optimization/experimentation, and since discovering the optimum or workable

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ranges, where the general conditions of a claim are disclosed in the prior art, involves only routine skill in the art.

9. Claims 10, 115-116, 119-122 are rejected under 35 U.S.C. 103(a) as being unpatentable over Utsonomiya et al (U.S. Pat. 5,552,237) in view of Hirata et al.

Regarding claim 115, Utsonomiya et al discloses a magneto-optic tape comprising, in this order:

a first heat absorbing layer comprising silicon nitride (column 4, line 63);

a magneto-optic recording layer comprising a single alloy of two or more metals (column 8, line 53); and

a second heat absorbing layer comprising silicon nitride (column 5, lines 5-9).

Regarding claim 116, Utsonomiya et al discloses that the magneto-optic recording layer comprises TbFeCoCr (column 8, line 53).

Regarding claim 119, Utsonomiya et al discloses that the second heat absorbing layer is about 80 nanometers thick (column 6, line 14).

Regarding claim 120, Utsonomiya et al discloses that the magneto-optic recording layer is about 20-25 nanometers thick (column 8, lines 53-55 and column 7, line 42).

Regarding claim 121, Utsonomiya et al discloses that the magneto-optic layer is sputter deposit (column 8, line 55).

Utsonomiya et al does not specifically disclose that the substrate comprise a polyaramid material. Hirata et al discloses a tape comprising a polyaramid material.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the magneto-optic tape of Utsonomiya et al with the substrate comprising a polyaramid material as taught by Hirata et al.

The rationale is as follows: one of ordinary skill in the art would have been motivated to provide the magneto-optic tape of Utsonomiya et al with the substrate comprising a polyaramid material as taught by Hirata et al as doing this would decrease the wrinkles of the tape due to the thermal process involved in manufacturing the tape.

10. Claims 52 and 123 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ono in view of Hirata and further in view of Zhou et al (U.S. Pat. 6,040,066).

Regarding claims 52 and 123, Ono et al in view of Hirata et al discloses the article described above. Ono et al in view of Hirata et al does not specifically disclose that the reflective layer further comprises titanium. Zhou et al discloses an optical information medium comprising a reflective layer comprising titanium (column 4, line 29). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the article of Ono et al in view of Hirata et al with the reflective layer made of AlTi as taught by Zhou et al.

The rationale is as follows: one of ordinary skill in the art would have been motivated to provide the article of Ono et al in view of Hirata et al with the reflective layer made of AlTi as taught by Zhou et al as doing this would improve the mechanical stability of the layer.

Allowable Subject Matter

11. Claims 102, 111 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

12. Applicant's arguments with respect to claims 1-6, 10, 12, 16-19, 34, 51-52, 101-123 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angel A. Castro whose telephone number is 571-272-7584. The examiner can normally be reached on Monday through Thursday, 8 AM to 6 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa T. Nguyen can be reached on 571-272-7579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



ANGEL CASTRO
PRIMARY EXAMINER

Angel Castro, Ph.D.